Samco UV Ozone Stripper

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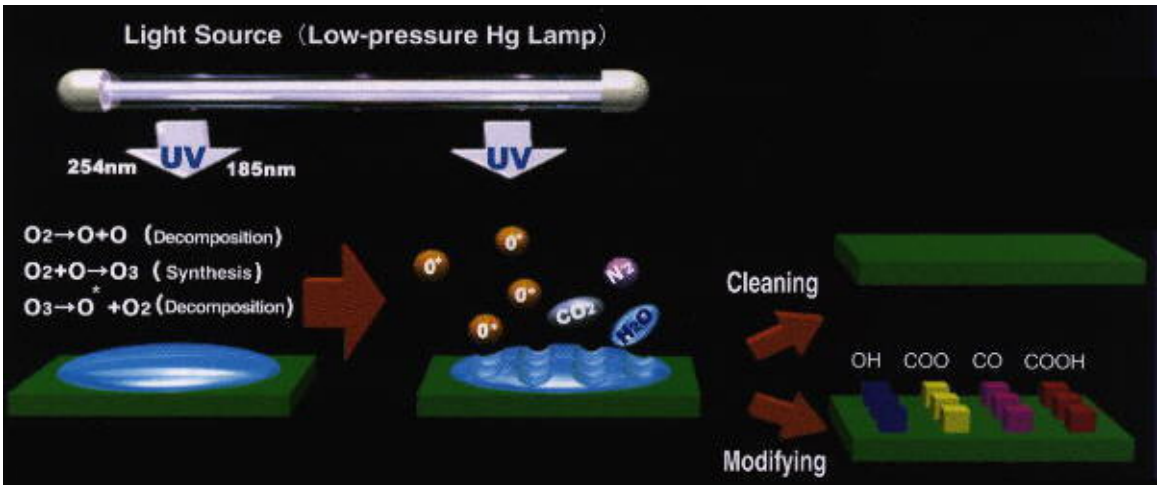
The Samco model UV-1 is a stripper/cleaner used for cleaning or stripping organic materials such as solvent residues, photoresist, ink, or polyimide from substrate materials.

The system uses a combination of UV light, ozone, and heat to accomplish this. You do not always have to use ozone. Running only oxygen through the system will clean very small layers of organics.



Warnings

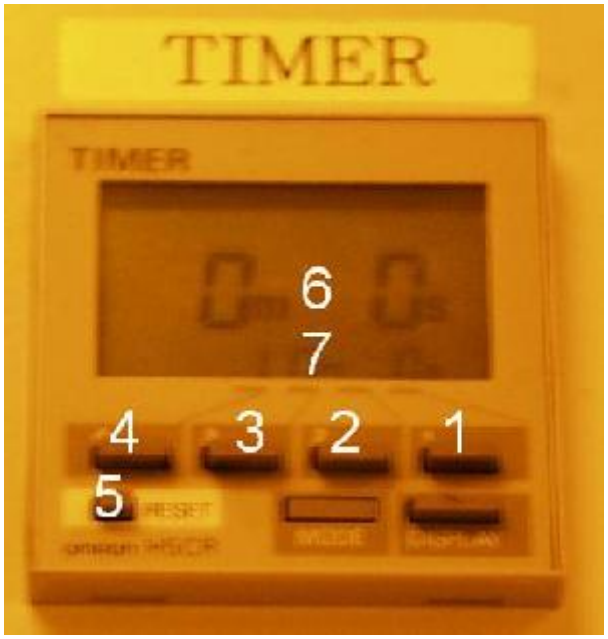
1. The stripper uses ozone which is toxic. Never open the cover unless you are sure that the system has vented completely. If you abort a run in progress, a manual purge must be done for a MINIMUM of 3 minutes. A manual purge is accomplished by pressing the purge button, which will light up when active, then stopped after three minutes by pressing the purge button again.
2. Using a sample taller than 12mm can cause the UV lamp to break upon closing the cover. The breaking of the lamp releases small amounts of mercury into the chamber. If the heater is run during this condition, toxic levels of mercury vapor can be released.
3. The surface of the hotplate could cause burns to unprotected skin and through cleanroom gloves. Only use tweezers to place and remove substrates.

Controls

Following are detailed descriptions of each of the relevant control panels for the stripper. These will be referenced in the following instructions.

A. This is the main control panel for the system. The switches are as follows.
A1. MAIN POWER
A2. HEATER
A3. PURGE
A4. UV LAMP
A5. START
A6. RESET
A7. OZONE GENERATOR

B. This is the timer where you will set the time for your process.
B1. Set Seconds in process time.
B2. Set tens of seconds in process time.
B3. Set minutes in process time.
B4. Set tens of minutes in process time.
B5. Reset the time left on the counter.
B6. Time left in active process. PV=Plate Value



B7. Set time for process. SV=Set Value

C. This is the temperature controller for the system. It is only on when the HEAT button is on.
C1. SET
C2. LEFT
C3. DOWN
C4. UP
C5. Temperature measured on the plate.
C6. Temperature set point.

Instructions

1. If the MAIN POWER(A1) button is not on, turn it on. If the light for the button will not come on, make sure the power supply (the small box located to the left of the stripper) is on.
2. Press the PURGE(A3) button and allow it to run for three minutes.
3. Once three minutes has passed, open the lid and visually inspect the uv lamp (located in the lid). **If the lamp is broken close and latch the lid, then find help from a staff member!**
4. If you need the hotplate and the HEATER(A2) button is not on, turn it on.
5. Set the temperature to the desired level. You do this by pushing the SET(C1) button on the temperature controller. On the temperature setpoint line(C6), the two left digits will start blinking. The far right digit will be solid. Use the UP(C4) and DOWN(C3) keys to set the solid digit. Push the LEFT(C2) button to move to the middle digit. Set this one in the same way. Press the LEFT(C2) button to set the last digit on the left. If you need to redo a digit, continue to press the LEFT(C2) button until that digit is solid. Once the time is set, press the SET(C1) button. No digits should be flashing.
6. Set the time for the process. To do this, go to the timer(B) and use the bottom 4 keys(B1-B4) to set the number of minutes and seconds you wish to run your process. The set time will be displayed in the lower set of numbers(B7). For example if my process was 14 minutes and 23 seconds I would push B4 once, B3 four times, B2 twice, and B1 three times.
7. Calibrate the oxygen flow into the chamber. To do this, close and latch the lid. Press the START(A5) button. The flow meter will register a flow. For most uses you want the flow between 30 and 40 on the meter. Once the meter is calibrated,

press the RESET(A6) button. Press the PURGE(A3) button. After three minutes of purging press the purge button again. If you have any questions on the flow you need, contact your advisor or a staff member.

8. If you are using the UV lamp and the ozone generator, and these are not on, turn them on. These buttons are UV LAMP(A4) and OZONE GENERATOR(A7). If you are using only O2 in your process, leave the ozone generator off.
9. Open the lid and carefully place the substrate on the hotplate. If the plate temperature is high, a pocket of air can form between the wafer and the plate. The wafer may slide accross the hotplate. When the substrate temperature equalizes it will sink to the plate. Once this has occured, position the substrate in the middle of the hotplate.**Note: Do not place any substrates higher than 12mm in the chamber!**
10. With your left hand slightly raise the chamber lid, then with your right hand move the bar holding the lid to the right. Slowly lower the chamber lid and fasten the two catches on the front of the chamber. Do not procede until BOTH latches are securely fastened.
11. Make sure the manual purge button is in the off position.
12. Press the START(A5) button. Once the set time has been reached, the START light will go out and a automatic 3 minute purge will begin. Wait until the automatic purge has completed (3 minutes). Note: To abort a run, press the RESET(A6) button. DO NOT OPEN THE LID AT THIS POINT. Press the PURGE(A3) button. The PURGE button will light up and a nitrogen flow will enter the chamber. Let the purge conitnue for a MINIMUM of three minutes. After the three minutes of purge it is safe to open the lid and retrieve your substrate.
13. When the purge light goes off, open the latches and lift the chamber lid.
14. Remove your substrate, close and latch the lid, and press the MAIN(A1) button.
15. Clean up any materials left around the stripper.

Troubleshooting

1. If there is no oxygen flow, make sure that the bottle in the chase is not empty. Do this by entering the chase behind the machine and make sure that the high pressure side (closest to the bottle) is not zero and that the valve on top of the bottle is open.